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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/577,300

01/25/2007

Dieter Lehmann

P29885

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7055 7590 06/25/2010  
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EXAMINER

PAUL, JESSICA MARIE

ART UNIT

PAPER NUMBER

1796

NOTIFICATION DATE

DELIVERY MODE

06/25/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
pto@gbpatent.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/577,300	<b>Applicant(s)</b> LEHMANN, DIETER	
	<b>Examiner</b> Jessica Paul	<b>Art Unit</b> 1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5,9-11,13-19 and 21-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,9-11,13-19 and 21-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/18/2010 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lehmann (WO99/61527). The examiner is using US Patent No. 6770378 as a translation of this document.

Regarding claims 1-5 and 9; Lehmann teaches perfluoralkyl substances that have been radiation decomposed by irradiation and modified, such as PTFE (instant claim 5) fine powder that was produced with an irradiation dose of greater than 100 kGy (instant claims 3 and 4). By means of the presence of reactants, preferably under the influence of oxygen (instant claim 2), perfluoralkyl substances are attained that were

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modified during the radiation decomposition which are preferably present in a modified form with perfluoralkyl carboxylic acid (-COOH) and perfluoralkyl carboxylic acid fluoride (-COF) groups [col4, line38-48]. Lehmann teaches the perfluoralkyl substance is chemically coupled with polyamide components [col4, line20-26], such as polyester amides and/or polyester ether amides and with additional polymers such as polyesters [col5, line1-6; line9-12]. One having ordinary skill in the art would recognize that the hydroxyl end groups of the polyester would afford a reaction with the -COOH groups on the perfluoralkyl substance, thus coupled via ester bonds (instant claim 9).

Although Lehmann does not teach specifically reacting a modified perfluoralkyl substance, polyester amide, and polyester in a preferred embodiment of the invention, a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including the non-preferred embodiments. *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.). Therefore, it would have been obvious, to one having ordinary skill in the art, at the time of the invention, to try; picking and choosing from a finite number of identified, predictable solutions, with reasonable expectation of success, and would have been motivated to do so because Lehmann teaches polyester amides and polyesters are suitable for making surface modified compact substances.

Regarding claim 10; Lehmann discloses chemical coupling to polyamide components, such as polyester amide or polycaprolactam (secondary amino group) via -COOH or -COF groups [col4, line20-30].

Regarding claim 11; The Office notes that claim 11 further defines the reactive or reactively modifiable or reactively activatable functional group, thus claim 11 is an optional limitation.

Claims 13-19 and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lehmann (WO99/61527). The examiner is using US Patent No. 6770378 as a translation of this document.

Regarding claims 13-17; Lehmann teaches a method of making perfluoralkyl substances that have been radiation decomposed by irradiation (instant claim 14) and modified, such as PTFE fine powder (instant claim 17) that was produced with an irradiation dose of greater than 100 kGy (instant claims 15 and 16). By means of the presence of reactants, preferably under the influence of oxygen, perfluoralkyl substances are attained that were modified during the radiation decomposition which are preferably present in a modified form with perfluoralkyl carboxylic acid (-COOH) and perfluoralkyl carboxylic acid fluoride (-COF) groups [col4, line38-48]. Lehmann teaches the perfluoralkyl substance is chemically coupled with polyamide components [col4, line20-26], such as polyester amides and/or polyester ether amides and with additional polymers such as polyesters [col5, line1-6; line9-12]. One having ordinary skill in the art would recognize that the hydroxyl end groups of the polyester would afford a reaction with the -COOH groups on the perfluoralkyl substance, thus coupled via ester bonds.

Although Lehmann does not teach specifically reacting a modified perfluoralkyl substance, polyester amide, and polyester in a preferred embodiment of the invention, a reference may be relied upon for all that it would have reasonably suggested to one

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having ordinary skill the art, including the non-preferred embodiments. *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.). Therefore, it would have been obvious, to one having ordinary skill in the art, at the time of the invention, to try; picking and choosing from a finite number of identified, predictable solutions, with reasonable expectation of success, and would have been motivated to do so because Lehmann teaches polyester amides and polyesters are suitable for making surface modified compact substances.

Regarding claim 18; Lehmann does not explicitly disclose a temperature at which the PTFE fine powder is irradiated. One having ordinary skill in the art would recognize that if no temperature is set forth, it is assumed that the reaction takes place a room temperature (25°C), thus the PTFE fine powder is treated through subsequent tempering at low temperatures (25°C) receiving the perfluoralkyl carboxylic acid fluoride groups (-COF).

Regarding claim 19; Lehmann teaches if irradiation occurs in air, then subsequent hydrolysis of -COF groups results in -COOH groups via the moisture in the air [col2, line6-10]. The Office notes that "humid air" is simply air with moisture in it.

Regarding claims 21 and 22; Lehmann teaches a method of making perfluoralkyl substances that have been radiation decomposed by irradiation and modified, such as PTFE fine powder that was produced with an irradiation dose of greater than 100 kGy under the influence of oxygen, producing a modified form with perfluoralkyl carboxylic acid (-COOH) and perfluoralkyl carboxylic acid fluoride (-COF) groups [col4, line38-48]. Lehmann teaches the perfluoralkyl substance is chemically coupled with polyamide

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components (polymeric substance that contain primary and/or secondary amino groups with at least one other functional group capable of chemical consecutive reactions) [col4, line20-26], such as polyester amides and/or polyester ether amides and with additional polymers such as polyesters [col5, line1-6; line9-12]. Lehmann teaches the reactive formation in a melt is performed at temperatures greater than 200°C.

Furthermore, additional olefinic polymers may be added to this reaction [col5, line9-12].

Regarding claim 23; Lehmann teaches the perfluoralkyl substance is chemically coupled with polyamide components [col4, line20-26], such as polyester amides and/or polyester ether amides and with additional polymers such as polyesters (contain hydroxyl end groups with at least one other functional group capable of chemical consecutive reactions) [col5, line1-6; line9-12].

Regarding claim 24; Lehmann teaches reacting the irradiated perfluoralkyl substance with polycaprolactam [col6, line8 (polyamide 6)].

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lehmann (WO99/61527), wherein US Patent No. 6770378 is used as a translation of this document, as applied to claim 13 above, and further in view of Magat et al. (US Patent No. 3188165).

Lehmann renders obvious the basic claimed method for producing a modified perfluoroplastic, as set forth above, with respect to claim 13.

Regarding claim 25; Lehmann fails to teach low-molecular and/or oligomeric and/or polymeric substance that contain urea groups and/or isocyanate groups and/or

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blocked/protected isocyanate groups and/or urethane groups and/or uretdione groups with at least one other functional group in the molecule, which are capable of chemical consecutive reactions. Magat et al. teaches radiation modified polytetrafluoroethylene polymers [claim 13] with operable modifiers (monomeric or polymeric compounds) such as vinyl isocyanate [col28, line35-36] and polyamides [col29, line68-69]. Therefore, Magat et al. teaches that vinyl isocyanate and polyamides are functional equivalents for the purpose of surface modifying an irradiated polytetrafluoroethylene substrate. It is *prima facie* obvious to substitute art-recognized functional equivalents known for the same purpose (See MPEP § 2144.06).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-5, 9-11, 13-19, and 21-25 have been considered but are moot in view of the new ground(s) of rejection.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica Paul whose telephone number is (571)270-5453. The examiner can normally be reached on Monday thru Friday 8:00- 6:00p; alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/

Supervisory Patent Examiner, Art Unit 1796

Jessica Paul

Examiner

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/JMP/